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AN ESSAY

ON

THE HYDROPIC STATE

OF

FEVER.

BY WILLIAM HOWARD, JUNR.
OF VIRGINIA.

MEMBER OF THE PHILADELPHIA MEDICAL SOCIETY.

Bolster'd with down, amid a thousand wants,
Pale Dropsy rears his bloated form and pants;
"Quench me, ye cool pellucid rills!" he cries,
Wets his parch'd tongue, and rolls his hollow eyes.

BOT. GARD.

1813

PHILADELPHIA:

PRINTED FOR THE AUTHOR BY HUGH MAXWELL,
OPPOSITE CHRIST CHURCH.

on far land
with Compts from the Author

AN INAUGURAL DISSERTATION

FOR

THE DEGREE OF DOCTOR OF MEDICINE,

SUBMITTED

TO THE EXAMINATION

OF THE

REV. JOHN ANDREWS, D. D. PROVOST, (PRO TEM.)

THE

TRUSTEES AND MEDICAL FACULTY

OF

THE UNIVERSITY OF PENNSYLVANIA,

ON THE 5th OF JUNE, 1805.

TO THE MEDICAL PROFESSORS

IN THE

UNIVERSITY OF PENNSYLVANIA,

THIS ESSAY

IS RESPECTFULLY INSCRIBED

AS AN HUMBLE TRIBUTE

OF

GRATITUDE AND RESPECT,

BY THEIR SINCERE FRIEND AND PUPIL,

THE AUTHOR.

PREFACE.

DROPSY has been so often the subject of medical inquiry, that a mere repetition of what has been already said, may perhaps seem superfluous. As the imformation, however, respecting this disease, is diffused over so many volumes, and is, on that account, accessible with difficulty, I think it a matter of some consequence to collect into a point some of the many valuable observations which have been made on this subject by men of the greatest celebrity.

In the following dissertation I have not aspired at originality, being more desirous of facilitating the progress of well substantiated doctrines, than of forming conjectures of my own, whose fame, like many of the ephemeral productions of the day, might scarcely survive its publication.

AN ESSAY

ON THE

HYDROPIC STATE OF FEVER.

THE term Dropsy is applied to that disease in which there is a preternatural collection of serous or watery fluids, in some one or more cavities of the human body, and is variously named according to the different parts it may occupy: thus when seated in the head, hydrocephalus; in the thorax, hydrothorax; in the abdomen, ascites; and so of the rest. Although it be necessary to designate, by appropriate terms, the different forms of this disease which usually occur, according to the parts affected, yet all of these seem to depend upon some general cause, very much in common to the whole. But in whatever part it is seated, it may in general be referred to one or other, or perhaps both of the following sources; namely, an increased effusion or diminished absorption of a serous or watery humor, which, in a healthy state of the system, is continually poured forth into every interstice of the animal machine, for the due performance of its several functions. Whenever, therefore, the exhalation from those vessels which furnish this fluid is morbidly increased, or the action of those whose office it is to

absorb it, becomes impaired, an accumulation takes place, constituting what we familiarly call Dropsy.

This exhalation is supposed to be increased from several causes. In the first place, whatever occasions an interruption of the venous circulation, as the return of the blood from the finer arterial ramifications to the right ventricle of the heart, causes the finer and more volatile portions to transude through the exhalants, thereby producing an unusual accumulation in some part of the body. A polypus in the right ventricle of the heart, and an ossification of its valves together with scirrhosities of the spleen, liver, and other viscera, are ascribed by all writers as fruitful sources of this disease, which they doubtless induce chiefly by preventing the free return of venous blood to the heart. To these impediments to the circulation may be added, the compression on the descending cava produced by the increased bulk of the uterus, during pregnancy, and even an erect posture in weakly habits, which is so often found to produce serous swellings in the lower extremities.

As a proof, however, that a scirrhosity of the viscera may produce Dropsy, Dr. Monro relates the case of a soldier, being seized with a quartan ague, in Flanders, found a tumour in his left side below the ribs, and soon after all his belly swelled. He returned to Scotland, and was taken into the infirmary at Edinburgh, where he died. His body being opened, a considerable quantity of water was found in his belly, and a scirrhouſe spleen, beset with two little bags which contained about six or seven ounces of water; the whole weighed one hundred and twenty ounces.

Dr. Cullen supposes a laxity of the exhalants to be one of the most frequent causes of an increased exhalation. That such a cause does operate in the production of Dropsy is presumable, from the frequent appearance of this disease among those who have been previously debilitated by diseases of long duration, when such a state of the exhalants may with justice be suspected. And how often do we see an autumnal intermittent or remittent fever, protracted into winter and then terminate in ascites. I say ascites rather than any other form of Dropsy, because Dr. Rush has shewn, that Intermittents tend to produce those congestions in the abdominal viscera, which terminate in effusions in the belly. I have already mentioned, that it was probable, hydropic effusions, might not only be ascribed to increased exhalation or diminished absorption, but even both of these phænomena may take place at the same time; for it is just as natural to suppose an atonic state of the absorbents, as well as an atonic state of the exhalants to be connected with general debility of the system.

Many other causes of Dropsy are enumerated by authors, all of which I do not think it worth while to take notice of at present, but shall content myself with barely mentioning some of the most remarkable, as a sedentary life, moist climate, the destructive practice of drinking ardent spirits to excess, &c.

AN INACTIVE, SEDENTARY LIFE.

As this implies an absence of exercise which is at all times so necessary to the health and strength of the

body, it is very justly considered as a frequent cause of Dropsy. Ramazzini shews, by a variety of examples, how much more frequent Dropsies are among those whose employment requires a sedentary life, than among those who are obliged to be more active.

A MOIST CLIMATE,

Has been always thought productive of this disease, and this is the reason the people of Holland, and other marshy countries, are more subject to Dropsies, than those who live in a more pure dry atmosphere.

THE DESTRUCTIVE PRACTICE OF DRINKING SPIRITUOUS LIQUORS TO EXCESS.

Hence it is that drunkards so often die Hydropic. Dr. Darwin observes that the general effect of drinking fermented or spirituous liquors, is an inflamed scirrhous or paralytic liver, with its various critical or consequent diseases, as leprous eruption on the face, gout, dropsy, epilepsy, insanity. It is remarkable, continues our author, that all the diseases from drinking spirituous or fermented liquors, are liable to become hereditary, even to the third generation, gradually increasing, if the cause be continued, till the family becomes extinct.

Dropsy from the earliest ages has been characterised by a certain train of symptoms, which, were supposed to be inseparably connected with it, and to afford the surest clue by which to judge of its presence.

Without regard, therefore, to the several species of Dropsy, Dr. Sydenham makes use of the generic term, and tells us that a pitting of the ankles, difficult respiration, scarcity of urine, and excessive thirst, are pathognomonic symptoms, and as such, are always present. Others have been occasionally mentioned, as pain in the thorax, cough, &c. but as they do not so frequently occur, they are not noticed by all writers.

Before proceeding any farther in the investigation of this disease, I think it necessary to pay some attention to the above mentioned symptoms, which I shall do, in the order in which they are enumerated. And first

OF THE PITTING OF THE ANKLES..

This was reckoned by Sydenham, to be the first symptom which makes its appearance in Dropsy, and as such is particularly spoken of by him. Although he mentions it as an invariable occurrence in the incipient state of the disease, yet it is very evident, from what he afterwards says, that he is of opinion this symptom may and actually does exist independently of an hydropic affection. For he tells us, that it is not so certain a sign of a beginning Dropsy in women, as it is in men; as being frequently founded in pregnancy and a suppression of the menses, from whatever cause the suppression proceeds. Nor is a swelling of the legs a certain sign of the dropsy in men, as it frequently attacks those who are affected with asthma. In confirmation of what has been said, Dr. Wilkes asserts, that there have been cases of Dropsy which terminated fatally, and the legs never once swelled.

DIFFICULT RESPIRATION.

This like the other has been looked upon as an inseparable concomitant of Dropsy; but as this effect seems to be wholly mechanical, I think it rarely occurs in any other form than that of hydrothorax or ascites. In the former instance, it is produced by the effusion of serous fluid, in the pleuræ, preventing the expansion of the lungs, and in the latter, by the pressure of the fluid collected in the cavity of the abdomen, against the diaphragm, thereby diminishing the dimensions of the thorax.

SCARCITY OF URINE,

Is so often present in Dropsy, that some have asserted it an impossibility for this disease to take place unless there was a diminution of the urinary secretion at the same time, and indeed, it seems natural enough to suppose, that hydroptic effusions should be influenced by the state of this discharge. Instances, however, are not wanting to shew that the urinary secretion has remained unaltered throughout the complaint. Notwithstanding the exceptions which go to prove that this symptom is not universally present, I am clearly of opinion that it demands the strictest attention of the physician to increase it as much as possible.

EXCESSIVE THIRST,

Is often a distressing symptom and when not allayed by diluent drinks, as is too frequently the

case, the unhappy sufferer experiences the most excruciating torment. This symptom usually attends Dropsy, but it is present also in most fevers, as must be clear to every one who ever witnessed a paroxysm of an intermittent. It has been found wanting, according to Dr. Darwin, in this disease, and therefore cannot be considered as truly characteristic of it.

Great thirst is said by Sydenham to be occasioned by a putrefaction of the lymph; which mode of accounting for it, at this advanced age of medical inquiry, is totally inadmissible. The ingenious and decisive experiments of Dr. Seybert of this city, incontestibly prove the incompatibility of putrefaction in the blood vessels with animal life. From the experiments of this gentleman, it appears that a certain degree of heat, the presence of vital air, a certain degree of moisture, together with rest are indispensably necessary to putrefaction. Now as these circumstances are never found to occur in the living animal, it affords proof positive that this process cannot go on so long as the animal possesses vitality. Again, it has been shewn that air, the most innocuous of all bodies when injected into the blood vessels, produces instant death, and as the elimination of air is characteristic of putrefaction, it is self-evident that it cannot take place. I see no reason why we may not suppose the thirst which supervenes in Dropsy, to be, as in other fevers, the effect of preternatural excitement of the vessels of the fauces; for by doing this we can as readily account for its phenomena in one disease as another, without referring it to such an inexplicable cause.

Thus have I taken notice of most of the symptoms which usually attend Dropsy, and observed that

they may not only occur in other diseases than the one in question, but may even be absent in this.

This collection of serous fluid constituting Dropsy was till lately supposed to arise only from a weakened but natural action of the sanguiferous system, but it was reserved for the discriminating eye of a Rush to point out its sole dependence upon the morbid action of the arterial system. The truth of this discovery appears to be irrefragably proved from the following well known facts.

A HARD, FULL AND QUICK PULSE.

This symptom known to occur in many cases of Dropsy, is in other diseases, esteemed a correct indication of the presence of inflammatory action, and will in general with most Physicians warrant the use of the lancet.

SIZY BLOOD.

This has been taken notice of by many writers. The alternation of Dropsies with certain diseases which were evidently accompanied by excess of action in the arterial system. Dr. Rush says he has known anasarca alternate with vertigo, and both ascites and anasarca alternate with tonic madness. And Jackson tells us that at Camden, S. Corolina, the intermittent fever, the dysentery, and dropsical swellings so often alternated with one another, as evidently shewed they all depended upon one general and febrile cause.

But above all, the injurious effects of stimulating medicines in certian Dropsies, and the salutary ten-

dency of a contrary mode of practice, inecontrovertibly shew, that there already exists too much action in the blood vessels. Dr. Rush supposes nineteen Dropsies out of twenty to be original arterial diseases; and the water which has been supposed to be the cause of Dropsy, to be as much the effect of preternatural and morbid action in the blood vessels, as pus and gangrene are of previous inflammation.

Dropsy thus derived chiefly from a diseased action in the blood vessels, appears in two forms—viz. 1st, With marks of great morbid excitement; and 2d, With marks of weak morbid excitement. By attending to these two forms of Dropsy, we shall be enabled to prescribe for the state of the system, and not the name of the disease.

Although all ages and both sexes are subject to this disease, yet women are oftener attacked by it than men; and the old of either sex are more liable to it than the young. Old women after they are done bearing children, and young women labouring under chlorosis often become hydropic.

I come now to make some general observations on the several causes of Dropsy, in doing which, I shall not pretend to specify any of its remote causes, having sufficiently, for my purpose, done this in a former part of this essay. It is only necessary to remark, that the remote causes of Dropsy are as many and various as are the diseases to which the human body is obnoxious; for as they all, sooner or later, by their continuance, produce indirect debility in the system, so do they dispose to Dropsy by creating its predisposing cause.

ITS PREDISPOSING CAUSE.

The predisposing cause of Dropsy, as of all other diseases, is debility, and this too of the indirect kind; or, as Dr. Rush has more happily expressed it, debility from action. And that Dropsy seldom or never depends on direct debility, or more properly “debility from abstraction,” seems very certain from this circumstance, that all of the remote causes of Dropsy, however multiplied they may be, have a tendency to wear down or exhaust the excitability before the disease makes its attack. I never knew a Dropsy, induced by starvation. I would not be understood, that there can be no exception to this observation, for I am well aware that a rupture of the lymphatics, thoracic duct, &c. have all been urged as laying the foundation of Dropsy.

ITS PROXIMATE CAUSE.

The proximate cause I suppose to be morbid action in the blood vessels, disposing to a secretion of serum. We have many reasons for supposing the effusion of serum in Dropsy, to be a secretion. In the first place the pellucid colour of the serum, which was found in the ventricles of the brain, in a case of yellow fever, and its not being coagulable by heat,*

* The water obtained from punctures of the legs in anasarca, Mr. J. Hunter says, like that found in the brain, does not coagulate with heat.

afford a strong presumption of this fact. Beside, in diseases of great inflammatory action, we see the blood vessels relieved of their burden by a secretion of pus, why may we not then, with equal propriety, imagine that in other cases, these same vessels take on a new action and exonerate themselves of their superabundant fluids, by the process of secretion as in the other instance?

THE PROGNOSIS.

As in all other diseases when forming a prognosis, particular attention should be had to the age of the patient, state of system, &c. so we should be very cautious in predicting a speedy or favourable recovery of our patient in Dropsy. A more favourable prognostic, however, may in general be formed of those who become dropsical after a long continued intermittent or remittent fever, than of those whose disease is occasioned by ruptured lymphatics, thoracic duct, scirrhouis viscera, &c.

As I consider Dropsy, to be a disease of the arterial system, consisting of great and weak morbid excitement, and differing in no essential point from other states of fever, the means of cure should be adapted to the state of the system, which should never be lost sight of, not only in the treatment of Dropsy, but likewise of all other diseases. I begin therefore with the remedies which have been found useful in that state of Dropsy, attended with a full, quick, and tense pulse, which are evacuants of all kinds, and such others in general as have a tendency to diminish the force and frequency of the pulse.

The first and most important remedy under the head of evaeuants whieh I shall take notice of is,

BLOOD LETTING.

The utility of blood letting, in Dropsy, has been acknowledged in all ages, and by most of the nations of Europe; but we are especially indebted to professor Rush for its introduction into common practice in this country. Most authors unbiassed by a preconceived theory, and open to the conviction of truth, have been willing to do justiee to the laneet, but none have been more forward to assert its prerogative than the excellent Dr. Donald Monro. This gentleman has stated many valuable facts in support of its use in Dropsy, some of which I think worthy of a place in this dissertation. He relates a case on the authority of Hoffman, whcrein an hydropic patient, was cured, principally by blood letting. He also quotes another from Sponius, of a man in a Dropsy, which had rather increased than diminished by the use of hydragogues and diuretics, who was eured by twenty bleedings.

Mr. Cruikshank tells us, that he attended a patient with dropsieal swellings in his legs, who had a hoarseness for two years. One morning in stooping to buckle his shoes he bursted a blood vessel in his lungs, from which he lost a quart of blood, in consequence of whieh both the swellings and the hoarseness went off gradually and he continued well two years afterwards.

It would seem needless to adduce more proofs from ancient authority, to substantiate the efficacy of bleeding in Dropsy; when every practitioner is in the

continual habit of observing its beneficial effects within the sphere of his own practice. Men being now generally acquainted with its use in this disease have more frequent recourse to it than formerly; and hence it is, that we hear of so many more cures being performed by physicians of the modern day, than ever were heard of before.

In confirmation of this assertion, I can add a fact which lately came within my own observation, and is, I think, too much to the point to be overlooked on the present occasion.

About the middle of the summer 1804, a negro girl about eighteen or nineteen years of age, affected with ascites combined with anasarca, was committed to my care. I am unable to assign the cause of her disease, as I did not see her till it was completely formed, and her bulk very much increased. Her thirst was very great, urinary discharge small in quantity, and her respiration laboured and very difficult. Under these circumstances the usual remedies, such as cathartics, diuretics, &c. were administered, but with no advantage whatever; on the contrary I think she grew worse. On going to see her one evening, I found her delirious, calling in very incoherent language to her friends, whom she supposed to be present, for assistance, and often putting her hands to her head, complaining of the great pain it gave her. Her pulse was strong and full. I immediately had recourse to the physician * with whom I then lived, who having renounced the prejudices of the old school, very promptly prescribed venesection, which was put into effect to a pretty large extent.

* The late Dr. Smith, of Virginia.

The next morning she was in perfect possession of her reason and complained of no pain. I now gave her eatharties and diureties whieh proeured large evaeuations of water both by the bowels and kidnies. After this, she reeovered by the use of bark, gentian, preparations' of iron, and gentle exereise, together with a cordial diet.

In addition to these faets, I beg leave to insert two other eases in which blood letting has unequivocally performed eures in Dropsy. The first is an aceount of the effieacy of blood letting extracted from two letters to Mr. F. Cooke, student of medieine in the University of Pennsylvania, from Dr. Thomas Linn of Lessburgh, Virginia, and published in Dr. Coxe's Medieal Museum.

“ I have lately met with a ease of aseites combined with anasarca; the praetice in whieh, being novel here, but perfectly conformable to Dr. Rush's system, I felt an inelination to state to you. The subjeet was a woman in early life: previous to any appearanee of her last disease, aseites, &c. she had been for some time ill with an autumnal bilious remittent, which had debilitated her very mueh; when the enlargement of the abdomen was first pereived, her periodical fever, whieh had assumed the tertian type disappeared, the effusion continued to advanee rapidly under the skin as well as in the eavity: In this situation I was ealled to her. I commeneed (after a dose or two of mild aperients) with the digitalis, and pursued it un-
der every modifieation that it has ever been exhibited in, without any apparent advantage; finding this to fail, I turned my attention to the squills (a favourite medi-

cine with me, as you know) combined with small proportions of calomel: and here I was equally disappointed, the cellular substance was now so much distended, that I could scarcely perceive the beat of the radial artery at the wrist; the ascites, especially, still made a rapid progress. Thus baffled, in every respect, to be of service to my suffering patient, I applied myself, with fresh ardour, to the investigating of the nature of this disease, in order to which, I attended principally to the pulse, and by it I was at length conducted to success. I found on the second day after the last determination, an evident intermission in the beat of the artery, to occur after the 5th or 6th stroke: from this circumstance, I concluded, that there existed a latent morbid excitement in the arterial system, suppressed by congestion somewhere, and determined to have immediate recourse to the lancet and active purges, consisting of jalap and calomel: the blood that was first drawn (about 15 ounces) was not sизy; that circumstance I did not expect: the day following, in the morning, I bled again, and in the meantime kept up moderate evacuation from the bowels. I now perceived the pulse to quicken considerably, and to become more tense, corded, and hobbling in its action; in the evening I took away about 18 ounces of blood and continued the mercurial purges: at this time no change could be perceived in her bulk, nor in any of the secretions or excretions. When sitting up, although a woman of moderate size naturally, she now filled a large chair. I was still confident, from the change in the pulse, that my ideas were correct, relative to the state of action in

the system, and determined to persevere: with this resolution I visited her the next morning—but behold! to my surprise and pleasure I found her sitting up, reduced to a mere skeleton, there appearing not the smallest symptoms of effusion under the skin or in the abdomen. She informed me that some little time after the last bleeding, a profuse discharge took place from the skin; and an astonishing flow of urine soon followed, which continued till the swelling had entirely subsided. The result of no case that ever came under my notice, has afforded me so much pleasure. The triumph must be given (not to blind chance) but to a principle in medicine; and the saving of the patient should be ascribed to Dr. Rush, from whom I derived my reasoning."

I was favoured with the following communication by my fellow student Mr. Thomas Ewell, who was an eye witness of the circumstances which are here related.

"A negro woman was affected with anasarca, supposed to have been brought on in consequence of exposure to cold air. Fortunately she complained of a pain in the side, which was considered as a correct indication of the lancet. Accordingly this was freely used, and with the auxiliary of a few doses of mercury, she was perfectly recovered in a few weeks.

In ten months she had a return of her affections, though not a symptom of pleurisy. Mercury, fox-glove, and the sea onion were used alone, and in combination, but they did not produce a cure. She died of her complaint in two months."

II. PURGES.

The next remedies I shall recommend are purges, which have been very properly divided into drastic, and lenient, according to their greater or less action on the bowels. This class of medicines has received the sanction of all ages in the cure of Dropsy, and is, I believe, as deservedly held in high estimation as any with which we are acquainted. Whether, however, we should make choice of drastic purgatives or laxatives in the cure of this disease is a doubtful point, which long has and still continues to agitate the breasts of physicians. Dr. Home is full of the praises of eremor tartar, which is well known to be a gentle laxative, mild in its operation, and at all times under the command of the physician. Whilst Dr. Sydenham is of opinion that weak purgatives do more mischief than good in dropsical patients; and should always give place to those of a more active kind. But as there is a certain idiosyncrasy, or peculiar aptitude in almost every person, and even in the same person at different times to the action of stimuli, so it is impossible to foretel with any degree of certainty the extent of the operation of any medicine. Sydenham not only prefers drastic to lenient purges, but also advises the daily exhibition of these until a discharge be procured, or the extreme weakness of the patient forbid such a mode of practice. Whether drastic, or mild purgatives be administered, they act by diminishing the action of the arterial system, and thereby promote the absorption and discharge of water. To those unac-

quainted with the laws of the animal oeconomy, the modus operandi of purgatives in promoting the absorption of effusions in parts so distant from their seat of action as the cellular membrane and other cavities, may seem difficult to comprehend, but this apparent difficulty, will quickly vanish, when it is observed that any great evacuation procured from one part, will occasion an absorption of fluids, lodged in another, and these will be derived to the organ irritated by the medicines, and carried out of the body. The utility of purges in dropsy, is founded at least in part on this important medical axiom, which has been so extremely beneficial to mankind.

Dr. Rutherford cured a patient in the Infirmary at Edinburgh, of an universal Dropsy, by giving strong hydragogue purges, almost every day, for some time, and then by the use of strengthening bitters, bark and steel, and proper exercise, the patient was restored to perfect health. Mr. Hunter was so sensible of the power of cathartics, in promoting absorption, that he supposes the matter of a gonorrhœa to be conveyed by them in some instances into every part of the body.

Jalap, calomel, scammony and gamboge are purgatives, which have received the applause of all mankind, in the cure of Dropsy; but I do not mean to recommend any one to the exclusion of the rest, being fully persuaded that it is this class of medicines, and not any individual of the class, which has been found most useful. As the operation of cathartics on the system, has a tendency at all times, to produce debility, the pre-disposing cause of Dropsy, we should con-

tinue their use no longer, than they manifest their good effects by promoting a discharge of water from the body, for we are pretty sure, that when this is not done, and even to a considerable degree, they should be rejected as highly pernicious. With a view to this end, such medicines should be used, as either by their quality, or quantity, occasion a copious discharge of water, which should be persevered in, for a greater or less length of time, as the state of the patient may render necessary.

III. DIURETICS.

It is to be regretted that diuretics are so uncertain in their operation, since they are far preferable, when they produce the desired effects, to cathartics, affording a more easy and natural outlet to the contained fluids, and do not, like the latter, induce a state of debility in the system. Sydenham thinks that in weak constitutions, and hysterical subjects, the water should never be eliminated from the system, by means of purges and vomits, but that in all such cases, we should have recourse to diuretics, as remedies the best adapted to answer this indication, of any with which we are acquainted.

In the choice of diuretics, as of purgatives, there is great diversity of opinion among physicians. Whilst some have found the digitalis, the squill, and others, rarely to fail in the cure of dropsy, others of equal veracity have observed no benefit whatever to result from their employment.

Such seeming contradiction in practice, might lead to a supposition, that a correct and faithful account of the cases wherein these medicines had been used with such varied results, had not been given to the world, but I am inclined to think it is inattention to the different states of the system, which has insensibly given rise to so much contrariety of opinion.

Perhaps there is none on the whole list of diuretics, which has more excited the attention of mankind, and none, I am sure, in which more implicit confidence has been reposed, than the digitalis, and yet few physicians of the present time, are willing to rely wholly on this medicine, in the cure of dropsy. Drs. Withering and Ferriar, are very diffuse in their praises of it, and relate a variety of cases of hydroptic patients, which were cured by its use. Dr. Rush, on the contrary, thinks it operates by lessening the action of the arterial system, and supposes it useful only in Dropsy, of too much, and highly injurious in Dropsy of weak morbid action. Upon the whole, I think this at best a precarious remedy, and that it should at all times yield to the squill, and others of more unquestionable virtues.

With regard to the diuretic properties of the squill, I believe physicians of all ages, have spoken in the highest terms. Professor Barton, thinks it inferior to none in the whole *Materia Medica*, and has found it extremely beneficial in hydroptic affections. The average dose, according to the Dr. should be about four grains of the dried, and one scruple of the recent squill, to be regulated by the state of the patient, &c.

Besides these, nitre, and cremor tartar, are highly recommended, and much used in the cure of Dropsy. Two ounces of nitre, says Dr. Rush, dissolved in a pint of water, and a wine glass full of it, taken three times a day, have performed perfect cures, in two cases of ascites which have come under my notice. Of cremor tartar, Dr. Home, and many others, are very much prepossessed in its favour, and it is very properly entitled to the highest rank among those remedies, which Cullen calls laxatives, as distinguished from purgatives properly so called.

It may not be foreign to my subject, to take notice in this place of the unnatural practice which has long prevailed, of giving diuretics, and at the same time prohibiting the use of aqueous, or any diluent drink in Dropsies, which appears to be founded on erroneous principles, and productive of the greatest distresses to the patient. Dr. Millman, not only thinks that diluent drinks, may be used with impunity, but declares he has found them of the most essential service, and Dr. Cullen thinks, that whenever we can perceive that the quantity of urine voided, is equal to the quantity of drink, for the same time taken in, it is safe to allow as much drink, as the patient may desire.

IV. DIAPHORETICS.

Theory would prompt us to use this class of medicines in almost every case, and accordingly, many physicians have adopted this mode of treatment, and report many instances wherein it was followed by

the happiest consequences. Dr. Ferriar, especially states many cases, in which he performed perfect cures, by the use of diaphoretics. In Dropsies of great morbid action, they may do good not only by producing a discharge of serous fluid from the body, but also by diminishing the inflammatory action of the system.

I do not mean to advise such diaphoretics as produce a flow of perspiration by increasing the action of the heart and arteries, because such a measure would be like adding oil to a lighted taper in order to extinguish it, but the exhibition of tepid diluent drinks, together with such applications to the external surface as may excite the action of the capillary vessels, I am persuaded will often produce an alleviation of the symptoms. The known sympathy which exists between the stomach and the vessels, on the surface of the body, renders the use of diluent drinks particularly advisable, as by this sympathy or consent of viscera, a diaphoresis is induced without increasing the action of the sanguiferous system in general.

Dr. Ferriar has seen Dover's powder perform a cure in dropsy. A certain William Kay, aged twelve, admitted November 9th, 1789 into the Infirmary at Edinburgh, had become anasarca in consequence of exposure to cold. He was ordered to use the pediluvium, and afterwards to take a scruple of Dover's powder. The first dose did not succeed, owing to some mismanagement of the patient. A second dose was given which sweated him profusely, and reduced his swellings. He was then directed to take the bark, and was discharged, cured, in less than a week.

V. OF BLISTERS.

The use of blisters in this disease is very ambiguous. Dr. Rush speaks well of them in anasarca, whilst Sydenham was very much opposed to their use, and generally found their application succeeded by a mortification of the parts. Perhaps they were used by the latter physician in too *early*, or too *late* a stage of the disease.

Added to what I have already said, it will be sufficient to mention the following means which have been adopted and successfully followed in this state of Drop-sy; namely, low-diet, hard-labour, cold, fear, a recumbent posture, &c.

VI. LOW DIET.

The debilitating effects of low-diet, are well known to all, and accordingly physicians have availed themselves of its advantages in every disease of great inflammatory action, and hence the utility of what is called an antiphlogistic regimen, which is nothing more than an abstemious use of such food and drinks as nourish and stimulate the system. Many instances of the good effect of this antiplogistic regimen, in the cure of Drop-sy, are to be found in the records of medicine.

Dr. Rush says, he has heard of a woman who was cured of a Drop-sy by eating nothing but boiled beans for three weeks, and drinking nothing but the water in which they had been boiled.

VII. HARD LABOUR

Has repeatedly performed cures in Dropsy. A dispensary patient was cured of this disease by sawing wood, and Dr. Rush tells us that a patient labouring under ascites in the Pennsylvania Hospital, had his belly reduced seven inches in circumference in one day, by the labour of carrying wood from the yard into the Hospital. Several instances are related by Dr. Monro of dropsical patients being cured by travelling in cold weather.

VIII. COLD.

The reduction of the frequency of the pulse, on the application of cold to the body, is an universal occurrence; and the pulse of those who inhabit cold climates is always slower and more sluggish than the pulse of the inhabitants of warm countries.

This fact is so well authenticated as to constitute a national characteristic of the Laplanders, the Greenlanders and others of cold countries.

IX. FEAR

Has so great an effect on the system as to suspend, for a while, the action of the heart and arteries, as in syncope, which is often induced by a sudden fright or alarm, and by diminishing the action of these viscera, we

imagine it acts in the cure of Dropsy. Dr. Rush thinks that the fear of death, which was so distinguishing a part of the character of Dr. Johnson, added a good deal to the efficacy of fasting, in procuring the immense discharge of water which took place from him in his last sickness.

XI. A RECUMBENT POSTURE.

The blood like other fluids obeys the laws of gravitation, and is especially determined to those parts of the body which preserve a dependent position. This inequality in the distribution of the blood, is, I presume, the chief cause of the preternatural effusion of fluid, occasioning those watery swellings which we observe in the lower extremities, after a day past in an erect posture. In order, therefore, to prevent this phenomenon and expedite the cure, a recumbent posture should always be observed in Dropsy.

Having mentioned such of the remedies, as are most commonly used in this state of Dropsy, I proceed to make a few remarks on the second or last stage, which I shall endeavour to do as briefly as the nature of this essay will admit.

We generally distinguish this state of Dropsy from the former by some one or other of the following circumstances. “By occurring in habits naturally weak, by being produced by the operation of chronic causes, by a weak and quick pulse, and by little or no preternatural heat or thirst.” I am moreover of opinion that a Dropsy, which at its commencement

was of the tonic kind, may, by its continuance, so exhaust the excitability of the system as to put on every symptom, and require precisely the same method of cure of a tonic Dropsy. We observe a synocha which originally required the abstraction of a large quantity of blood, for its cure, degenerate into a disease of weak morbid action, and call for a different mode of practice, as bark, wine, and other tonics and stimulants. In like manner we may cure a Dropsy, by two modes of treatment, the reverse of each other; first by equalizing the excitement by blood letting, and then invigorating the system by tonics and cordial diet.

As I consider this state to be nearly similar to fever in general of weak morbid action; so the remedies which are found useful in both, are nearly of the same nature.

These are principally such as either by their stimulus, increase the circulation of the blood, or by their tonic virtues, add vigour to the system.

Besides these may be added diuretics, frictions, pressure, &c. which Dr. Rush supposes extremely necessary to the cure of this state of Dropsy.

Almost all the articles of the *Materia Medica*, under the heads of tonics, and corroborants, having been exhibited in Dropsy, and having had their several votaries, I do not think it therefore, necessary to proceed to such an amplification of detail, as the particular description of each of these remedies would lead me into, choosing rather to refer my reader for farther information, to the inestimable works of Monro, Millman, Cullen and Rush, each of whom has treated of this subject, and was amply qualified to do it justice.

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